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EXAMINER

GOLLAMUDI, SHARMILA S

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/851,042

Filing Date: May 08, 2001

Appellant(s): PETREA ET AL.

Brenda Wentz
Registration Number 48,643
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 24, 2006 appealing from the Office action mailed October 5, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,941,369	KATSURA et al	08-1999
5,976,562	KRALL et al	11-1999
JP09002537	KANTO PLAST KOGYO KK	01-1997
JP11028797	NIPPON MIRACTRAN KK	02-1999

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6,479,144	PETREA et al	11-2002
5,536,258	FOLDEN	07-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

A) Claims 34 and 37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8 of U.S. Patent No. 6,479,144.

US patent claims an antimicrobial spandex fiber containing an antimicrobial compound selected from triclosan, a silver based zeolite, a silver based glass, and mixture thereof. Further, US patent claims the antimicrobial compound in discrete areas of the fiber. Dependent claim 8 recites the exclusion of another organic antimicrobial compound.

Instant application claims an antimicrobial polyurethane film containing silver based inorganic compounds with a certain thickness. Further, the claim recites the antimicrobial compound in discrete areas of the fiber. Dependent claim 37 recites the exclusion of another organic antimicrobial compound.

US patent and instant application are obvious over one another since US patent claims the genus and instant application claims the species. The instant polyurethane species falls within the broad scope of US patent's spandex fiber since US patent defines the term spandex as "any standard polyurethane-type fibers" on column 4, lines 12-13. Therefore, the rejected claims are obvious over one another.

B) Claims 34, 36, 38-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsura et al (5,941,369). Claims 43-36 stand cancelled and were erroneously included in the Final Office Action of 10/5/04.

Katsura et al discloses a food-conveying belt. Example 1 discloses a polyurethane resin pellet and an antifungal/antibacterial agent are dry blended. The resultant mixture is plasticized and extruded into a sheet having a thickness of 0.3mm (11.8 mils). This film is then added to a polyester carcass containing an adhesion agent. Comparative example 2 discloses example 1 wherein silver-zirconium phosphate (instantly claimed silver-based inorganic antimicrobial compound) and antifungal are substituted instead, in the polyurethane film.

*Note the examiner bases the rejection on the polyurethane film intermediate product before its addition to the polyester adhesion sheet. See example 1, lines 25-35.

*The spatial orientation of the antimicrobial compound and the anti-tack/cohesive properties of the film are inherent since the prior art and the instant invention are not structurally distinguishable, i.e. the prior art and the instant invention are both polyurethane films with the instant thickness and instantly claimed silver-based inorganic antimicrobial compound.

C) Claims 34 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krall et al (5976562) in view of JP 09002537. Claims 43-36 stand cancelled and were erroneously included in the Final Office Action of 10/5/04.

Krall et al disclose a polyurethane film of .25mm thickness with silver. The antimicrobial silver is embedded in and coated onto the polyurethane. (Note example and col. 2, lines 5-15). Krall et al does not include an organic bactericide or additives. Krall teaches the

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metal compounds are embedded in the plastic in the form of discrete particles. See column 2, lines 5-10 and claim 1. The product may be extruded into shape. See column 4, lines 59-67.

Krall et al do not teach instant silver compounds, i.e. silver-based zeolites, silver zirconium compounds, or silver based glasses.

JP 09002537 teaches a container exhibiting antimicrobial property incorporating silver based zirconium phosphate. JP teaches silver based zirconium phosphate provides less discoloration and deterioration. The reference teaches resin such as polyurethane. (Note abstract)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Krall et al and JP 09002537 and utilize the instant silver-based antimicrobial compound. One would have been motivated to use silver based zirconium phosphate instead of Krall's silver since it provides less discoloration and deterioration as taught by JP 09002537. Further, one would have expected similar results since both teach silver-based polyurethane articles to provide an antibacterial effect.

D) Claims 34 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-028797 in view of JP 09002537. Claims 43-36 stand cancelled and were erroneously included in the Final Office Action of 10/5/04.

JP teaches polyurethane film with an antimicrobial agent, such as silver ions and antifungal agent. The heavy metal ions (silver) may also be linked to a carrier such as zirconium phosphate and zeolite. See page 8 of translation. The polyurethane film is then coated onto a thermoplastic resin to yield a final product (polyurethane resin mould). The film has a thickness between 10-1000 microns and instant properties. It should be noted that JP's polyurethane film

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and not JP's final product is said to read on the instant claims. Further, it is the examiner's position that the anti-tack and cohesive properties are inherent.

JP does not specifically direct a skilled artisan to utilize instant silver-based zeolites, silver zirconium compounds, and silver based glasses.

JP 09002537 teaches a container exhibiting antimicrobial property incorporating silver based zirconium phosphate. JP teaches silver based zirconium phosphate provides less discoloration and deterioration. The reference teaches resin such as polyurethane. (Note abstract)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine JP 11-028797 and JP 09002537 and utilize the instant silver compounds (silver linked to zirconium phosphate and zeolite). One would have been motivated to use silver based zirconium phosphate since it provides less discoloration and deterioration as taught by JP 09002537. Further, one would have a reasonable expectation of success in combining the references since both teach silver-based polyurethane articles to provide an antibacterial effect and JP '797 suggests using either silver ions alone or in silver ions in combination with zirconium phosphate and zeolite.

(10) Response to Argument

A) Claims 34 and 37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8 of U.S. Patent No. 6,479,144.

Appellants state that Terminal Disclaimer will be filed once the patentability of the claims is resolved.

Accordingly, the rejection is held abeyance until the patentability of the claims is resolved.

B) Claims 34, 36, 38-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsura et al (5,941,369).

Appellants argue that each and every element is neither expressly nor inherently met. Appellants argue that Katsura discloses the use of a dispersing agent, which provides for a uniform dispersion or dissolution of the antimicrobial compound and other constituents in the resin. Therefore, it is argued that the instant claims require the antimicrobial compound in discrete areas of the film and thus the claims are not anticipated.

Firstly, as recognized by the applicant, Katsura teaches dispersing the antimicrobial to provide for a uniform *dispersion*. See example 1. Although Katsura's general disclosure teaches dissolving or dispersing the antimicrobial agent, example 1 clearly discloses dispersing the antimicrobial in the resin. The examiner points out that **dispersion** as defined by Webster's is "a) a dispersed substance b) a system consisting of a dispersed substance and the medium which it is dispersed: colloid. *Colloid* is further defined as "a substance that consists of particles dispersed throughout another substance which are too small for resolution with an ordinary light microscope but are incapable of passing through a semipermeable membrane". Grant & Hackh defines dispersed as "an apparently homogenous substance, which consists of a microscopically **heterogeneous mixture** of two or more finely **divided phases**. See attached definitions. Thus, it can be seen that the term dispersion reads on applicant's limitation of discrete areas since the antimicrobial is not homogenous in the resin but rather in disconnected areas of the resin. Although, the substance appears homogenous on the macroscopic level, the compound is in fact

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in discrete areas on the *microscopic* level. Appellant has not claimed the instant subject matter to distinguish between macroscopic discrete areas and microscopic discrete areas. Further, it appears that appellant is equating the term uniform to dissolving, wherein the latter term does not have different phases. Although Katsura utilizes the term uniform, Katsura utilizes uniform in conjunction with dispersion, wherein the term “dispersion” must be given weight.

Secondly, page 4 of the instant disclosure defines discrete areas: “wherein at least some of the antimicrobial compound is present at the surface of the film, and, optionally, at least some of some antimicrobial is present within the film.” Thus, it can be seen that the appellants define discrete areas as spatial orientation of the antimicrobial particles in the polyurethane resin. The appellant further discloses that this is accomplished by mixing the antimicrobial agent into the resin and it is not “simply topically applied”. See page 3, last paragraph. In instant case, the prior art clearly does not coat the antimicrobial compound onto the resin and rather extrudes it, as appellant does. It is noted that appellant is changing the definition of “discrete areas” from what is clearly defined in the specification, to exclude dispersing agents after the examiner applied prior art.

Although appellants have not argued the examiner’s inherency position, the examiner discusses this position with regard to Katsura to clarify the record. As discussed in the Final Office Action of 10/05/04, it is the examiner’s position that the silver based compounds will inherently orient themselves in the manner of the instant invention since Katsura teaches the same polyurethane film with the instant thickness and instant silver antimicrobial compounds. Furthermore, the prior art’s polyurethane film is made by the same process as the appellant, i.e. the antimicrobial is dry blended with the polyurethane resin and heat-extruded. Therefore, since

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the prior art and the instant invention are not structurally distinguishable, it is the examiner's position that the properties of Katsura's film and the instant invention are the same. The examiner also points to US patent 6,479,144 made of record as art of interest to substantiate the examiner's position of inherency with regard to the spatial orientation of the silver antimicrobial compounds. It is further respectfully submitted that although US '144 does not qualify as prior art, prior art utilized to demonstrate inherency need not have a date that antedates the application in question as upheld in *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003). US '144 discloses that antimicrobial particles including the instant silver-based antimicrobials have been found to have excellent anti-tack properties and extend outward from the surface of the polyurethane. See column 5, lines 26-52.

C) Claims 34 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krall et al (5976562) in view of JP 09002537.

Appellants argue that with regard to inherency, the characteristics must be present and it is not enough to show that it may occur. Appellant argues that the polyurethane articles do not necessarily exhibit the anti-tack characteristics as claimed. It is further argued that the silver-based compound must be oriented in the instant manner, i.e. extending outward from the exterior of the film, to provide the anti-tack properties and the mere presence of the compound itself does not afford the instant properties. Lastly, appellants argue that in applying inherency, the Office must not only provide a basis and technical reason for the inherency position but must also support the position and show it necessarily flows from the teaching of the prior art.

Appellants' arguments have not been found to be persuasive for the following reasons:

Firstly, it is respectfully submitted that although the instant rejection is made under obviousness and the examiner utilizes the terminology “inherent”, inherency may be utilized in an obviousness-type rejection as noted in MPEP 2112.

The examiner recognizes that inherency is based on characteristics that must be present at all times and must necessarily flow from the applied prior art. It is the examiner’s position that Krall’s polyurethane resin comprising a silver antimicrobial agent has the instant properties and the instant properties will necessarily flow from the combined teachings of Krall and JP. Moreover, it is respectfully pointed out that the examiner not only provided a basis for inherency but also provided art of interest to substantiate this position in the Final Office Action of 10/4/05 as required. It is respectfully submitted that MPEP § 2112 states that once a reference teaching appearing to be substantially identical is made as the basis of a rejection and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference.” However, it is noted that appellant has not addressed these references or rebutted the examiner’s position with evidence.

The examiner’s position as discussed in the Office Action of 10/4/05 is as follows: The instant invention requires an 1) extruded polyurethane film that has a thickness of 10-500 mils, 2) silver based inorganic compounds, and 3) excludes additional anti-tack agents. The primary reference, Krall, teaches a 1) extruded polyurethane film with the instant thickness, 2) a metal compound wherein example 3 utilizes silver, and 3) excludes other anti-tack additive. Thus, as it can be seen, Krall teaches a *substantially* identical film. The only teaching lacking in Krall is the *instant* silver compound. Therefore, the examiner utilizes the JP to teach the instant silver compounds.

The examiner relies on US patent 6,479,144 wherein Petrea discloses that antimicrobial particles including the instant silver-based antimicrobials have been found to have excellent anti-tack properties since they extend outward from the surface of the polyurethane. See column 5, lines 26-52. Moreover, applicant's specification on page 5 also discloses that the incorporation of the silver compounds into the film, including elemental silver, affords the instant anti-tack property. With regard to the cohesive properties, US 5,536,258 is cited as art of interest, wherein US '258 teaches the benefit of using silver coating is that it provides a low-friction surface. Note column 9, lines 12-15

Therefore, the recognition of a newly discovered property inherently possessed by the prior art, does not cause the claim drawn to the discovered property to be distinguishable over the prior art. See *In re Best*, 195 USPQ 430 (CCPA 1977). In instant case, firstly Krall et al itself teaches the use of silver as the antimicrobial agent of choice. Although the silver compound is not the instant silver, the instant disclosure teaches that silver compounds including elemental silver (the agent utilized by Krall) extend outward from the resin once extruded to provide the instant properties. Thus, it is the examiner's position that appellants have merely recognized a feature inherently possessed by the prior art. It is further respectfully submitted that the prior art does not have to recognize this feature for it to be inherent.

Even if one were to argue that Krall does not have the instant properties since Krall teaches elemental silver, it is the examiner's position that the instant properties would necessarily flow from the combined teaching of Krall et al and JP. As discussed above, the only teaching lacking in Krall's extruded polyurethane resin is the instant silver compounds. Therefore, the examiner relies on JP to provide motivation for a skilled artisan to utilize the silver-based

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zeolites, silver zirconium compounds, and silver based glasses. JP teaches silver based zirconium phosphates provide less discoloration and deterioration in resins such as polyurethane. Therefore, the motivation to utilize silver based zirconium phosphate is to prevent discoloration and deterioration of the resin. Appellant has not provided evidence of the unobviousness of the instant invention.

The examiner further respectfully submits that the appellant has not provided any limitations to structurally distinguish the instant product from the prior art. It is further pointed out that appellant has not submitted any evidence to rebut the examiner's position.

D) Claims 34 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-028797 in view of JP 09002537.

Appellant argues that the instant claims require an extruded film and the primary reference does not teach an extruded antimicrobial-embedded thin film. It is further argued that "extruded" is a structural feature of the instant invention and it is not taught or suggested by the instant invention. Appellant argues the JP 11-028797 states that the polyurethane coating is painted onto the molding as a liquid.

Appellants' arguments have not been found to be persuasive for the following reasons:

Firstly, as discussed in the Final Office Action and discussed now for clarification purposes, the polyurethane film formed on the polyurethane molding is utilized to reject the instant claims. Note the title wherein JP states that the thermoplastic polyurethane resin mould consists of a *polyurethane film* having antimicrobial and antifungal activity coated on the surface of a thermoplastic polyurethane resin. Secondly, it should be noted that JP used the word film and coating interchangeably. Therefore, the examiner is rejecting the claims based on this

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polyurethane coat (film), i.e. the intermediate product and not the final product made by JP, i.e. the polyurethane coating on the thermoplastic molding.

The examiner respectfully points out that the claims are directed toward a product claim and the appellant is arguing the method of making the product, i.e. the film is not extruded. It is respectfully submitted that the method of making the product does not hold patentable weight in a product claim. In instant case, extrusion relates to the *process* of making the product, i.e. it is the process of forcing or pushing material out of a die, and does not affect the patentability of the product claim. The examiner does give weight to extrusion to the extent that the process of extrusion provides for the antimicrobial to be incorporated into the resin composition. However, it is pointed out that JP meets this limitation via another process. JP's antimicrobial is mixed into the polyurethane composition to provide for the instant spatial orientation of the antimicrobial particles and then coated onto the molding. Although the polyurethane coating is applied as a liquid, it dries to form a *film* to meet appellant's limitation of polyurethane film.

Although JP 11-028797 teaches the use of silver ions as the antimicrobial agent and also states that zirconium phosphates and zeolites may function as carriers for the heavy metal ions (see page 8 of translation), JP does not directly point an artisan to specifically utilize the instant silver-based zeolites and silver zirconium compounds. Thus, the examiner relies on the secondary reference, JP 09002537, to direct a skilled artisan to select the instant silver-based antimicrobials. JP '537 teaches the instant silver compounds not only provide an antibacterial effect but also prevent discoloration and deterioration. Therefore, the motivation to utilize silver based zirconium phosphate is to prevent discoloration and deterioration of the polyurethane film while providing the antibacterial effect.

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Lastly, although appellant does not argue the instant properties, as discussed extensively above in the *Response to Argument* section of rejections B and C, it is the examiner's position that the properties would necessarily flow from the instant combination of JP 11-028797 and JP 09002537.

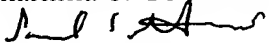
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

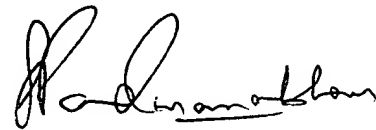
Sharmila S. Gollamudi


March 20, 2006

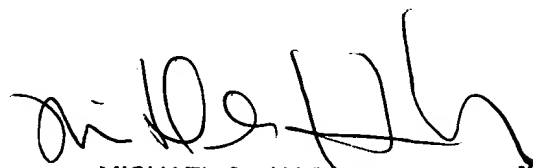
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